October 1, 2014 through 2016

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1.0 Executive Summary

1.1 Purpose

The purpose of this document is to provide input to the Information Technology Plan for the 2014-2016 Biennium to the North Carolina State Chief Information Officer (SCIO) as required by G.S. 147-33.72B. The statute mandates that each agency submit a technology plan to the SCIO by October 1 of each even-numbered year. Session Law 2011-145, Section 6A2.(d) directed each agency to include any information technology project, or any segment of a multipart project, costing more than two hundred fifty thousand dollars ($250,000) in the agency's most recent information technology plan. In addition, the IT Plan is intended to provide the following information:

- Provide Information Technology services including operational support, application development, infrastructure management and information security to agency personnel
- Oversight of Senate Bill 991 compliance
- Enterprise Information Technology strategic planning for the Agency
- Information Technology tactical implementation in order to increase productivity, efficiency and security of critical business functions.

1.2 Overview

The OSA Management Information Systems Division, (MIS) has developed a strategic business plan for the 2014-2016 Biennium. The business plan includes vision, objectives and business strategies to achieve the desired vision. This IT plan links the business strategies with IT initiatives and an overall IT strategy which enables the business strategy. In addition, the IT Plan is intended to meet the following objectives:

1. Enhance and improve the backup, restore and recovery of all Agency data and applications via a virtualization solution.
2. Review, update and test current applications as well as the BCP/COOP plans to improve the OSA's current processes and procedures.
3. Analyze existing server and network architecture with virtualization in mind culminating in the virtualization of all OSA servers.
4. Apply new Enterprise Agreement capabilities to upgrade the Public web server, SQL Server database servers, data storage servers, exchange, laptops and desktops etc
5. Update firewalls for team remote kits.
6. Improve features and use of the SARA Portal by using SharePoint 2010 new features
7. Continue to expand the use of the Audit Exchange (ACL) production service
8. Continue to expand Audit Exchange Extract, Transform and Load (ETL) processing capabilities
9. Design, Build and Implement Metrics SharePoint 2010 Portals for all OSA divisions

1.3 About This Plan

The MIS Division will continue to aggressively work to provide technologies to Agency personnel that will improve the efficiency and quality of Agency critical business functions.

1. OSA will move to a virtual server architecture for all servers
2. OSA agency personnel will continue to improve on the functionality of the SharePoint (SARA) internal portal.
3. The Business Continuity Plan (BCP) / Continuation of Operations Plan (COOP) will be updated and tested to meet State requirements and to address Pandemic influenza planning requirements.
4. OSA will continue to work with ITS to ensure that required IT services are smoothly transitioned where there is a value add of cost and service improvement while maintaining the operational functionality required for OSA to perform its mission.

2.0 Vision Mission and Values

Office of The State Auditor – IT Plan

2.1 Overview

The Office of the State Auditor seeks to be a highly respected, professional, and productive audit organization that makes a difference in state government. The Office wants its employees to be highly competent team players who enjoy their work and feel successful in their careers, while at the same time maintaining a work/life balance that allows them to have fulfilling personal lives.

2.2 Key Business Drivers

We protect the interests of taxpayers and others who provide financial resources to the State of North Carolina. Specifically, we provide objective information to interested parties about whether state resources are properly accounted for, reported, and managed; as well as whether publically-funded programs are achieving desired results.

2.3 Goals and Enabling Strategies

Commitment to Excellence – Striving to continuously improve in order to be the best we can be, individually and as an office.

Personal Responsibility – Taking the initiative to do the right things and being accountable for one's actions.

Can-do Attitude – Approaching challenges with a positive attitude.

Teamwork – Working together as one office-wide team with consideration and respect for others.

ONE-YEAR THEMATIC GOAL

- Practice peer-to-peer leadership. Everyone can lead by modeling the OSA core values, mentoring less experienced staff, encouraging others to do their best, celebrating team accomplishments, giving out friendly reminders when needed, etc.

- Clarify roles and responsibilities. We will "role" responsibility and authority down to the appropriate level.

- Emphasize project management to ensure we keep auditors auditing, do it right the first time, and report results in a timely manner.

- Integrate generally accepted leadership principles and practices (such as the OSA leadership philosophy, situational leadership theory, and employee coaching) into our culture to ensure the productivity and development of staff at all levels.

- Constantly evaluate and address OSA strengths, weaknesses, opportunities, and threats (SWOT) to ensure we serve the needs of our clients, legislators, citizens, and other users of our reports.

3.0 Agency Goals, Strategies and Initiatives

3.1. Goal 1 - Current Applications/Services

3.1.1 Time Reporting System (TRS) Enhancements

Summary	Time Recording System (TRS) is used by the Office of the State Auditor to track billable hours as well as employee leave. The original system was written and deployed between April and October 2002 using tools and techniques current at the time (Classic ASP, VB COM and Crystal 8.5).
Objectives	• Document all desired enhancements to the TRS application • Document the requirements for each enhancement • Determine the priority of each enhancement • Develop a technical solution for each critical priority enhancement • Design, build and implement the technical solutions
Time Frame	On going as changes are required
Resources Involved	MIS Project Manager Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (MIS-Services): $15,000 (Estimated)

3.1.2 Server Virtualization

Summary	OSA has ansitioned the IT infrastructure to a one predominately based on virtual technology. MIS has simplified the existing server infrastructure, made server infrastructure improvements/refreshes/upgrades more cost effective, and drastically improve the Agencies ability to recover from disasters (DR/COOP).
Objectives	Primary Goal: Transition the IT network infrastructure (Servers) to a predominately Virtual Architecture. In pursuit of this goal, the following endeavors must be completed: • Data Center Reorganization – to include the implementation of server racks, clean-up and consolidation of the data center into a single physical space • Server Consolidation – to include identification of servers which could host multiple functions as well as identification of servers which are candidates for virtualization • Development environment – to include identifying the target environment for developers and implementing that within the virtual architecture • Improved Asset tracking especially regarding software licenses • Virtual Host implementation – to include installation and configuration of multiple redundant virtual hosts and associated storage (SAN) • Server Transition – to include moving as many physical servers as possible to virtual servers in an orderly and transparent manner • Documentation / Process development to be included in the Agency BCP/COOP plans to improve the quality/ability of the Agency to recover
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Recurring Maintenance: $30,000

3.1.3 Virtualization Architectural Analysis

Summary	OSA is in the process of implementing a virtual server architecture. This project will work in conjunction with the Server Virtualization project to simplify the existing architecture, consolidate servers where appropriate, identify standards and best practices to be adhered to and to improve the monitoring and management of the OSA Network.
Objectives	• Simplify existing server/network architecture • Identify standards and best practices • Improve monitoring and management of OSA servers/network
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $4,000 (Estimated)

3.1.4 Virtualization Disaster Recovery Architecture

Summary	During annual testing/review of disaster recovery procedures and processes it came to light that not all of our applications are currently adequately backed up. While all of our data is backed up and recoverable, several components of our infrastructure are either unrecoverable or would require extensive effort to recover. It is recognized that in order to resume business as usual, both the infrastructure and data would need to be recovered. In addition, OSA must recognize the sensitive and confidential nature of the data residing on Agency servers and within Agency applications. Thus, any DR solution implemented must ensure the security and integrity of the systems being stored.
Objectives	A comprehensive and integrated disaster recovery is being developed that allows the agency to meet both Recovery Time Objectives and Recovery Point Objectives. The potential for a Virtualization solution is high and the solution will be evaluated and a pilot test case has been developed to finalize the feasibility of the virtualization solution.

	The Disk to Disk, Raleigh to the ITS owned and operated Western Data Center, will be implemented during the 2014-2015 FY's.
Time Frame	3rd Quarter FY 2015
Resources Involved	MIS Project Manager Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $80,000 (Estimated)

3.1.5 Virtual Development and Test Environments

Summary	OSA has identified the ongoing need to provide development and testing environments to support the ongoing application support and development efforts. Software Testing is an empirical investigation conducted to provide stakeholders with information about the quality of the product or service under test, with respect to the context in which it is intended to operate. Software Testing also provides an objective, independent view of the software to allow the business to appreciate and understand the risks at implementation of the software. Test techniques include, but are not limited to, the process of executing a program or application with the intent of finding software bugs. Software Testing can also be stated as the process of validating and verifying that a software program/application/product (1) meets the business and technical requirements that guided its design and development; (2) works as expected; and (3) can be implemented with the same characteristics. Software Testing, depending on the testing method employed, can be implemented at any time in the development process, however most of the test effort occurs after the requirements have been defined and the coding process has been completed.
Objectives	The testing environment is essential to enable the subject matter experts the opportunity to execute the developed software to ensure that is properly supports the defined business requirement. The environment is an isolated environment that eliminates the need to test in the production environment that presents a large risk factor.

	• Simplify number and type of test servers • Virtualize servers where possible • Maximize use of MS Enterprise Agreement • Consolidate code base into a single code repository • Ensure developers have access to most up to date development tools
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $5,000 (Estimated)

3.1.6 Email Archive – E-Discovery Plan

Summary	MIS implemented an E-Discovery solution that is constantly monitored and maintainded to ensure the capture and retrieval of "all" OSA E-mail. The solution has been in place for several years and only requires maintenance. Increasingly, public employees rely on electronic mail (e-mail) as a quick and useful communication tool for carrying out government business. Employees regularly use the e-mail system to carry out daily activities such as sending and receiving reports, policies, official memoranda, and correspondence, and for supporting various other business-related processes and transactions of their agency. Like paper records, certain e-mail messages have administrative, fiscal, legal, reference, and/or archival value. These State records may contain evidence of a particular action, have information that protects the rights of individuals or the government, document decisions made during the course of state business, or have lasting historical or cultural value. Therefore, some e-mail messages must be kept as a record to satisfy agency needs, record-keeping requirements, and to comply with the law. As public records, e-mail messages are subject to the same retention and disposition requirements as records in another format or medium, such as paper or microfilm. Consequently, public employees in both state and local government who use e-mail

	as part of their work are responsible for keeping or destroying messages following the terms of a records retention and disposition schedule. Employees can refer to their agency's records retention and disposition schedule, the General Schedule for State Agency Records, or the Retention and Disposition Schedules for Counties and Municipalities for specific details. Please consult the Government Records Branch Web site at www.records.ncdcr.gov for schedules and additional information. Public employees are required to be familiar with and comply with all applicable record-keeping practices and responsibilities mandated by their agency, the State CIO, their records retention and disposition schedules, or other official guidelines or policies to understand e-mail's function in relation to carrying out those duties. Should an agency or local entity lack an approved records retention and disposition schedule, it may not destroy or otherwise dispose of any records in its custody, whether in electronic, paper, or other format (including electronic mail), which are not so authorized by one of the schedules referred to above.7
Objectives	To ensure that the Office of the State Auditor can economically and effectively store and provide historic email when and if a request for such email is made via an e-discovery request.
Time Frame	On going as changes are required
Resources Involved	MIS Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $10,000 (Estimated)

3.1.7 Data Management Plan

Summary	The Office of the State Auditor (OSA) stores and manages data on a number of servers and file shares. Currently, data is monitored in an ad hoc basis primarily to troubleshoot identified problems. OSA needs a comprehensive and consistent method to monitor data usage and storage capacity, as well as document best practices, standards and a general Data Management Policy. OSA purchased a new auditing solution that was implemented in the spring fo 2014. The solution provided better methods for collecting, managing and using data that related to most all audits conducted.

Objectives	• Efficiently and effectively manage data while adhering to data retention schedules • Develop a consistent Data Management Policy for OSA • Monitor and manage storage usage to better determine trends and forecast future needs
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist
Costs	Total Solution (A new Practice Management componentt is being researched. The estimated implementation date would be spring of 2015 at an estaimted cost of $100,000

3.1.8 Inventory Management Improvement

Summary	OSA is required to maintain an inventory of IT assets that is sent to OSBM once a year. OSA has implemented an nefficient technilca solution that has modernized the asset tracking solution which is more accurate and efficient.
Objectives	1. Implement improvements to better collectand manage inventory data.
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (BMC Numara Hardware and Software Services: $3,000 (Estimated)

1.1.9 Remote Firewall Upgrades

Summary	In June 2014, OSA purchased replacement firewall appliances for the existing kit firewalls. The project willcontinue to upgrade the firewall technology throughout the 2015.
Objectives	• Replace existing kit firewalls with new hardware throughout FY 2015

	• Document procedures and best practices for use of kit firewalls
Time Frame	FY 2013
Resources Involved	Project Manager Network Specialist Technology Support Specialist
Costs	On going as changes are required

1.1.10 BCP - COOP / Business Continuity Plan Development (LDRPS)

Summary	Business recovery and continuity of operations is an essential element in the responsible and reliable delivery of State government services to the public. The possible threat of natural disasters, technological disasters, and terrorist attacks (biological, conventional, chemical, nuclear) suggests a clear need to develop comprehensive plans that ensure essential services continue in spite of facility loss, leadership incapacity, and other foreseeable and unforeseeable difficulties. The Governor has issued Executive Order 102 which directed all NC State Agencies to design a continuity of operations program (COOP) and coordinate its implementation. NCGS §147-33.89 Business Continuity Planning mandates that all NC State Agencies maintain comprehensive Business Continuity Plans (BCP). The NC Division of Emergency Management, State Emergency Response Team (SERT), the US Department of Homeland Security (DHS) and the Federal Emergency Management Agency (FEMA) have offered direction and guidance for state and local continuity of operations plans. In accordance with that guidance, this document satisfies both COOP and DR. LDRPS will be the repository of the COOP data.
Objectives	**Purpose**. The purpose of this plan is to document necessary actions and responsibilities for continuing operations should North Carolina Office of the State Auditor leadership be incapacitated or should facilities at 2 South Salisbury Street (Raleigh) become unusable. This plan is intended to assure continuance of OSA's essential function(s) in the face of all hazards both natural and manmade. **Applicability and Scope**. This plan is written for application during times of normal work schedules or during times of declared state emergencies. It applies to OSA operations in Raleigh. This plan is intended to serve as a guide in responding to a disaster. It does not attempt to plan for all possible disasters, nor does it attempt to dictate all actions that must occur after a disaster. **Definition:** For the purpose of this plan, a disaster is defined as any unanticipated

	event that significantly hampers the ability of the Office of the State Auditor in carrying out its official duties. General Policy: This plan will be invoked when the State Auditor (Emergency Executive Officer) declares a disaster. In his absence, the Chief Deputy may declare may declare a disaster.
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $8,000 (Estimated)

1.1.11 GIS Pilot Project

Summary	Geographic Information Systems (GIS) represent a powerful and effective tool for presenting and analyzing data in terms of physical locations. This project will develop a test case for use of GIS within OSA and will implement that test case.
Objectives	• Identify potential uses of GIS within OSA • Develop guidelines and best practices for GIS use including data cleanup • Implement a Test Case application of GIS technology within OSA
Time Frame	On going as changes are required
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $8,000 (Estimated)

Office of The State Auditor – IT Plan

1.1.12 Audit Exchange (ACL) – Extract, Transform, Load (ETL)

Summary	Expand Audit Exchange use to pull data from client Agencies into the Audit Exchange architecture for better processing before the data can be downloaded to an Auditor's laptop. This effort will be focused on during FY 2015.
Objectives	**1. NCAS** Source: ITS Mainframe via OSC's script Connection: FTP, moving to secure version when ITS does Frequency: Daily Status: Currently testing with P Region. Will add NC23 and Universities when testing is completed. Expected completion: June 30, 2015 Outstanding issues: Need to consult with OSC re: getting a unique record identifier. Also need to identify vendor fields we need to do extended analysis and ask OSC to add them to our script. We will need to begin running the script prior to go-live date as OSC will soon start passing their ITS charges along to us. **2. Banner** Source: 14 individual universities excluding UNC-CH and NCSU Connection: University-specific Frequency: Monthly Status: Planning; need to meet with UNC-GA to identify new fields Expected completion: Three phase implementation with first group (currently unidentified) implemented by 12/31/2010. Will update dates for second and third groups but expect them to be implemented by 3/31/11 and 6/30/11, respectively. Outstanding issues: UNC-GA worked with us to create a script for the universities to run to get our current dataset. Interviews with the financial teams indicate that they need considerably more data than we get now. First order of business is to modify the script (with GA's assistance) to add the new data and make it easy to automate. The new data includes basic financial data such as check number, plus vendor information and HR/Payroll info.

Next, we will need to set up connections with each university, after deciding who will initiate the connections and designing appropriate security. (MIS leads this initiative.)
While MIS is handling connections, ISA will work on making sure the data is accurate and consistent.
Depending on how much the Banner script(s) can be automated, this process could depend heavily on the availability and technical expertise of individual universities' staff, which inserts a measure of uncertainty to the project.

3. UNC Hospitals

Source: UNC Hospitals
Connection: Secure FTP
Frequency: Biweekly
Status: UNC-H currently produces a Payroll/HR file for us biweekly and we are set up to receive it via SFTP. The file did not work for financial auditors in FY09. We believe the issue has been fixed and are waiting for financial to confirm.
Expected completion:
2015 FY
Outstanding issues:
Waiting for financial audit. Right now we are set up to get the file in the lab so that will need to be switched over to the main network. Decision needs to be made about whether we are going to run an FTP server and where it will go in the network.

4. BEACON

Source: OSC
Connection: Unknown
Frequency: Unknown (minimum of monthly)
Status: Planning
Expected completion:
2015
Outstanding issues:
Need to finalize dataset (Lisa). Need to determine data access procedure – should we use sFTP and get the data ourselves, or is it better to let OSC create a report and let us pull it? How much of the procedure can be automated on OSC's end? Does ITS charge for reporting and can we run our own scripts?

	5. Colleague Source: Community College Main Office Connection: Unknown Frequency: Monthly Status: Planning Expected completion: June 30, 2015 Outstanding issues: Colleges already send a data load to the central office. Need to examine this and determine what needs to be added, and work with the central office to modify the script and distribute it to the colleges. Once the central office is receiving the data we need, we should be able to connect and retrieve it monthly. This implementation should happen concurrently with BEACON. **6. PeopleSoft** Source: UNC-CH and NCSU Connection: Unknown Frequency: Unknown (minimum of monthly) Status: Planning Expected completion: 2014 - 2015 Outstanding issues: NCSU is currently using PeopleSoft and UNC-CH is implementing it. Depending on how the Banner project goes, we may be able to accelerate this data feed. We do not anticipate serious problems in establishing secure connections or pulling accurate data with either school. We don't anticipate pulling other data over via ETL. Data access will be on request and placed on the AX Server by ISA.
Time Frame	Fy 2015
Resources Involved	
Costs	Total Solution (Hardware + Services): $TBD (Estimated)

1.1.13 Server Capacity Monitoring Plan

Summary	The Office of the State Auditor (OSA) runs a number of servers in support of its network infrastructure and services. Currently, servers are monitored on an ad hoc basis primarily to troubleshoot identified problems. OSA needs a comprehensive and consistent method to monitor server thru put, memory usage, storage capacity usage, as well as other hardware and software parameters to better detect trends, identify potential problems and conduct server capacity planning.
Objectives	To develop a comprehensive and consistent method to monitor server thru put, memory usage, storage capacity usage, as well as other hardware and software parameters to better detect trends, identify potential problems and conduct server capacity planning.
Time Frame	FY 2015
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $TBD (Estimated)

1.1.14 SharePoint Features Enhancement

Summary	The primary objective of the SARA Portal Project is to implement a portal solution to replace the static web pages of SARA. The OSA would implement the portal using Windows SharePoint Services (WSS) and Microsoft SharePoint Portal Server 2010 (SPS), leveraging objects, properties, and security information from our Windows Active Directory, and content from SARA. The second major objective of the SARA Portal Project is to make the portal-based SARA content both self-maintaining and easily modifiable. Little or no content update efforts should be required of the OSA MIS staff, and at the same time the portal should allow for the inclusion of new resources and currently unrecognized enhancements in an easy and straight forward manner. The project team and OSA MIS staff should work jointly to • Identify all the content owners along with the particular content for which they are responsible; • Familiarize these content owners with the portal implementation; • Train and encourage content owners to use the portal interface to maintain

	and update their information. • Recruit volunteers who can provide feedback during the portal implementation process. Content owners must be "conditioned" to use Microsoft Office to connect to the appropriate SharePoint area, list, or document library when editing or saving documents and list items, instead of relying on file server shares and file browsing. We want to move collaboration users into the web-based mechanism for sharing information, and away from the pain of searching and browsing for files in a file hierarchy. The third major objective of the SARA Portal Project is to implement beneficial portal technology features not available in old static web pages. (Refer to the list of SPS/WSS technologies below.) A fourth major objective of the SARA Portal Project is to introduce to OSA users the concept and methods of shared user-maintainable websites and collaboration via web pages, and to successfully seed a modernizing change in the organization's approach to sharing information.
Objectives	(See above statement)
Time Frame	FY 2014 - 2016
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): TBD (Estimated)

1.1.15 KBOX Imaging for New Laptop Deployment

Summary	The OSA laptop and PC imaging process requires an economical solution for the near and long term future due to the sever budget cuts. Currently, remote laptop imaging requires that the laptop owner travel to the Raleigh office to have the device re-imaged. The cost of time, travel and auditor unavailability is substantial. MIS is investigating and imaging option that would remove the Raleigh travel requirement and provide a new and current image that can be used from the regional offices. The image can be updated and delivered on a schedule and method that would not

	jeopardize the network delivery capacity. From the initial assessment that have been conducted, MIS believes that an "Appliance Solution" could potentially work best for remote site image management and on site image management The long term solution will be to design and implement the Virtual Client solution that will replace imaging of laptops and PC's.
Objectives	Best practice topics to be covered include: • Cross-platform disk imaging to automate the build out of systems and eliminate the costs of manual provisioning • Full visibility into the hardware and software inventory to enable effective asset management • Software, configuration and patch distribution from a centralized library to reduce the costs of updates and maintain machine compliance regardless of platform • Software metering across to enable software license harvesting • Remote control, repair and recovery to eliminate desk visits
Time Frame	FY 2014-2016
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $80,000 (Estimated)

1.1.16 MS Enterprise Agreement Management Plan

Summary	The Office of the State Auditor (OSA) entered into an Enterprise Agreement (EA)

	with Microsoft for server and desktop software effective 7/1/2010. This agreement will be in effect for 5 years, and allows OSA to upgrade any and all server and desktop software identified in the agreement. Once per year OSA must reconcile license usage and 'true up' with Microsoft – purchasing and adding to the EA any new software licenses in use. **Enterprise Agreement Summary** The Microsoft Enterprise Agreement was designed for organizations like OSA, that wish to standardize on a core suite of Microsoft products at a significant discount when compared to buying through ad-hoc contracts (OSA's current buying pattern). The Enterprise Agreement incorporates maintenance (Software Assurance) which is highlighted below. The licenses purchased over the term of the contract are perpetual and remain under the ownership of the company post the contract term. If you wish to renew after the 5th year, the contract costs are for Software Assurance which allow upgrades and other benefits, without Software Assurance you would not have the rights to upgrade. The rights below remain in effect until the contract renews for another term. The Enterprise Agreement is a term contract for the State of North Carolina in which agencies and other government entities have the rights to purchase Microsoft licensing at a significant discount. ***Enterprise Agreement Software Assurance (SA) benefits**:* • New Version Rights • Spread Payments • TechNet Plus Subscription and TechNet Managed Newsgroups • Problem Resolution Phone Support • Extended Lifecycle Hot fix Support • Cold backups for Disaster Recovery • Corporate Error Reporting • Windows Fundamentals for Legacy PCs • Microsoft Windows Pre-Installation Environment (WINPE) • E-Learning • Home Use Program • Employee Purchase Program
Objectives	To maximize the usage and benefits gained from the Microsoft Enterprise Agreement.
Time Frame	The current EA will expire June 2015. OSA will negotiate a new EA at that time
Resources Involved	Project Manager Network Specialist Technology Support Specialist

	Business and Technology Applications Specialist
Costs	Total Solution (Hardware + Services): $TBD (Estimated)

1.1.17 Exploration of Unanticipated Opportunities

Summary	OSA is often presented with unanticipated challenges and/or opportunities. Exploration of those opportunities in terms of determining the objectives, scope, cost-benefits and how the item fits within the IT Portfolio and/or meets the Agencies goals and objectives is a high priority endeavor. (e.g. HR Applicant Tracking system)
Objectives	Explore unanticipated challenges and/or opportunities to determine how they meet Agency goals and objectives and how they fit within the IT Portfolio.
Time Frame	Fy2014-2016
Resources Involved	Project Manager Network Specialist Technology Support Specialist Business and Technology Applications Specialist IS Audit Specialist
Costs	Total Solution (Hardware + Services): $TBD (Estimated)

3.1.19 Continuing Professional Education Tracking System (CPE)

Summary	Continuing Professional Education Tracking System (CPE) is used by the Office of the State Auditor to track the creditable hours of training which employees need and which they accumulate during one and two year planning periods. It provides reports which summarize the credits received and credits still remaining to satisfy Government Auditing requirements for continuing professional education. It also tracks the professional certifications maintained by employees. The web-based data-driven application was written to use ASP.NET 4.0 web forms for the user interface and Microsoft SQL Server 2008 R2 for database and reporting services. The application uses Windows Active Directory authentication and ASP.NET Roles API for authorization to resources. The application was developed during calendar year 2010 and deployed in late autumn of 2010.

	The application is used in a self-service mode by employees of OSA who enroll in various training sessions (both internal to OSA and external), and who add professional certifications to a personal profile when received. The employees can use various reports to view training sessions taken, planned, and credits received. The application is used by training administrators to schedule training sessions, approve enrollments, and grant training credits within the system to employees who have attended. A large amount of initial data for the planning period of 2011-2012 was imported from spreadsheets during that period as OSA maintained the original system of spreadsheets in parallel with the new CPE application during calendar year 2011.
Objectives	• Maintain the CPE application providing administrative and user support, data integration and patches as needed • Document the CPE application and any requested enhancements • Determine the priorities of any enhancements that are requested • Develop a technical solution for each critical priority enhancement, if any • Design, build and implement the technical solutions as needed
Time Frame	FY 2014 – 2016 (Change Management)
Resources Involved	MIS Project Manager Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (MIS-Services): $3,000 (Estimated) Maintenance and Enhancements

3.1.20 OSA Metric Focused SharePoint Portals

Summary	An OSA Metric system has been developed using Microsoft SharePoint 2010 and SQL Server 2008 technologies. The Metrics System is primarily used by OSA's management team to gain a mid to high level understanding of how the audits are performing. This system provides links to relevant documents, such as the Audit Performance reports, and data in dispersed spreadsheets and databases to provide details, like hours spent on different

	tasks, milestones, goal attainment and performance gauging. Each division within OSA maintains a metric's page that includes multiple reports, calculative and tabular data and graphs to capture every detail of an Audit process. Additional features, such as a red, green, yellow colored indicator presents an at-a-glance presentation of an audit's performance.
Objectives	Following are some planned enhancements: • Research a new Practice Management solution 2014-2015 FY.. • Develop further automation for the processes and data gathering. • Design and develop a high-level dashboard to place on top of the metric pages for even further executive-level summaries • Design, build and implement the technical solutions as needed
Time Frame	FY 2014-2016
Resources Involved	MIS Project Manager Technology Support Specialist Business and Technology Applications Specialist
Costs	Total Solution (MIS-Services): $75,000 (Estimated)

3.2 Goal 2 - Infrastructure Assets

1. Refresh older computers and infrastructure with up to date technology.
2. Ensure that external OSA network traffic to conform to ITS policy while enabling end to end data encryption to ensure data integrity.
3. Replace aging and unsupported network switching infrastructure (Remote firewalls)
4. Implement Microsoft Enterprise Agreement
    a. Replace/refresh existing Microsoft office, productivity and server software to ensure standardization, maintain compliance and ease administrative and support issues. These include:
        i. Upgrade Enterprise Servers – Refresh OSA MS Enterprise Servers
        ii. Upgrade Exchange Server – Refresh OSA Exchange Server
        iii. Upgrade SharePoint server in support of SARA project
        iv. Upgrade SQL Server – Refresh SQL server

v. Upgrade MS Office - Refresh office and productivity software to latest versions from Microsoft.

5. Improve wireless networking security to provide both offensive and defensive network security.
6. Improve computer security for field auditors by providing data center access to critical applications so that in event of theft or loss data will not be compromised.
7. Improve intrusion detection methodology and correction action plans.
8. Upgrade network printers

3.3 Goal 3 - Operations/IT Management

1. Move towards an ITIL based, service orientated IT organization
2. Improve Project Management and Delivery (UMT PPM Tool)
3. Improve Applications Portfolio Management (UMT APM Tool)
4. Improve Infrastructure assets management and inventory control (Numara)
5. Improve Security management by implementing a network monitoring tool (Rapid7) to monitor network traffic, intrusion detection and application response timing analysis.
6. Improve Disaster recovery and business continuity planning (Sever Virtualization and LDRPS- COOP)

3.4 Goal 4 - Human Resources

Maintain MIS Staff

CIO	(Hunter W. Robinson, MA, PMP)
Technology Support Analyst	(Michael Fetting)
Technology Support Specialist	(Leo Alls)
Business and Technology Applications Analyst	(Neelima Chitoor)
Business and Technology Applications Specialist	(Mark Smith)
Network Specialist / Security Liaison	(Paul Saksa)

4.0 Business Needs

4.1 Significant Unmet Needs

There are several business needs that the OSA could not satisfy due to lack of sufficient budget and the complexity of initiatives. OSA is open to innovative approaches to address these unmet business needs:

- Increase WAN Speed for the four OSA regional offices

- Better Enterprise asset management solution to enable better accountability.
- Enterprise financial toolset that aligns with the type of information we are increasingly asked to provide.
- PPM/APM toolset that is appropriate to the project and that actually adds value.
- Development of a better agency information sharing model e.g. Virtualization, SharePoint

4.2 Opportunities for Statewide Initiatives

OSA has identified several areas where a statewide approach to solve the business problem would benefit several agencies by reducing overall cost. Some of the key areas for statewide initiatives are as follows.

- OSA would like to see an improvement with enterprise vendor agreements. Agencies could sign up in advance for what is essentially could be an improvement with future vendor agreements. OSA is not sure what the right contract arrangement is, but OSA would like to have some vehicle where the price is known, and OSA has the opportunity to join the pool and gain some downside price movement.

- During applications research and development, share knowledge that exists across agencies so that duplicity of effort is avoided. In addition, a side benefit could be that OSA and other agencies could save time and effort with legal and properly competitive improvements that would provide a means to move through the application provisioning process much more rapidly.

- Our applications development staff is increasingly being asked to do small applications to address unmet needs in the personnel and financial management areas. For a long time, we forestalled these efforts so as not to duplicate what we hoped BEACON and other enterprise systems would become. OSA has addressed areas like: performance rating tracking, fixed asset annual inventory tools, applicant education tracking, RIF management, IT device management. Other agencies' IT staffs are being asked to meet similar needs. We have skilled staff and have done these efforts inexpensively and well,

to the delight of OSA users. This is not our core competency of OSA, and these needs could be and should be e addressed at the enterprise level.

Appendix 1 - Project Road Map

MIS PORTFOLIO FY2013	Priority	Infra/App	IT Plan Status	Cost Model
New Service Development / Projects			OSA_IT_Plan FY's 2014-2016	MIS Budget Line Item Projections FY 2015
Time Reporting System (TRS) Enhancements	1	App	On Going	In Progress
Server Virtualization Completion	1	Infr	On Going	In Progress
Virtualization Architectural Analysis	1	Infr	On Going	In Progress
Virtualization Disaster Recovery Architecture	2	Infr	On Going	In Progress
Virtual Development and Test Environments	2	Infr	On Going	In Progress
Application Virtualization	3	Infr	On Going	In Progress
Email Archive / E-Discovery Remote Plan	3	App	On Going	In Progress
Data Management Plan - User Mapping/House Cleaning	2	Infr	On Going	In Progress
Inventory Management Improvement	2	Infr	On Going	In Progress
Remote firewall Upgrades	3	Infr	On Going	In Progress
BCP - COOP / Business Continuity Plan (LDRPS)	1	Infr	On Going	In Progress
GIS Pilot Projects	3	App	On Going	In Progress
Server Capacity Monitoring Plan /Management	2	App	On Going	In Progress
Employee Life Cycle Management Process	3	Infr	On Going	Scheduled
End User Virtualization Plan	2	App	On Going	In Progress
Exchange LINC Video Conferencing Plan	3	App	TBD	Budget Constraint
External WEB Modernization Plan	3	App	TBD	Budget Constraint
Western Data Center Disaster Recovery Site	1	Infr	Draft	In Progress
ACL (Audit Exchange	1	Infr	On Going	In Progress
PFX Engagement/Knowledge Coach	1	App	On Going	
Services and Support				
SharePoint Features/Enhancements	1	App	On Going	Scheduled

MS Enterprise Agreement Management Plan	3	Infr	On Going	In Progress
Metrics Project Plan	1	App	On Going	Completed
Rapid 7 Intrusion Detection Analysis and Mitigation	2	Infr	On Going	In Progress
Printer Modernization Services	2	Infr	On Going	In Progress
WAN Speed Upgrade at Four Reional Offices	1	Inf	TBD	Budget Constraint
Support Operations and Maintenance				
Customer Support	1	Infr	On Going	Production
Time Reporting System (TRS)	1	App	On Going	Production
Electronic Publishing System (EPS)	1	App	On Going	Production
Email Exchange Server	1	App	On Going	Production
Network Security (Intrusion Analysis)	1	Infr	On Going	Production
Email Archive /Recovery	1	App	On Going	Production
FACTS	1	App	On Going	Production
Asset Management Numara	1	Infr	On Going	Production
Disk Keeper	1	App	On Going	Production
Tape Imaging Backup	1	Infr	On Going	Production
Server - Database	1	Infr	On Going	Production
Server - External Web	1	Infr	On Going	Production
Server - State Auditors Resource Area (SARA) Internal Portal	1	App	On Going	Production
Server - Active Directory	1	Infr	On Going	Production
Numara Track-IT Help Desk	1	App	On Going	Production
Remote Desktop Deployment (KACE)	1	Infr	On Going	Production
MIS Support Equipment	1	Infr	On Going	Production
ACL Licenses	1	App	On Going	Production
Microsoft Software Enterprise Agreement	1	Infr	On Going	Production
Network Management	1	Infr	On Going	Production
Data Center Operations / Documentation (Physical)	1	Infr	On Going	Production

Appendix 2 - Project Planning

The Office of the State Auditors MIS division will employ standards based project management techniques and best practices for all MIS projects. Every project will have its own Share Point site (located at *SARA - State Auditors' Resource Area* > *MIS* > *MIS's*

Private Site > *Project Name* for document sharing and collaboration, issue and bug tracking as well as high level task monitoring. In addition, each project will have a fully developed project plan (developed in MS Project) which will be closely monitored and updated.

Appendix 2 - Communication Plan

	Prepared By	Reviewed by	Approved By
Name	MIS Management		
Role	Project Manager		
Signature			
Date			

Office of The State Auditor – IT Plan

Circulation List

Stakeholder	Stakeholder Title
TBD	Project Manager

Change Control Log

Date	Description	Reviewer Title

Office of The State Auditor – IT Plan

Introduction

OSA MIS has been asked to compile requirements for the (Project Name) Project.

The purpose of this document is to define the communication mechanisms and methods that will be required during the life of this requirements gathering exercise. This document covers the project communication between MIS technical staff and all other project sponsors and subject Matter Experts (SME'S).

Other areas like resource management, scope management, risk & issues management, planning & dependency management will be discussed in this document.

Communication Management Process

Communication Management Processes are required to ensure timely generation, collection, dissemination, storage, retrieval and ultimate disposition of project information to relevant stakeholders. These processes provide critical links among people and data necessary for the successful communication. The communication management covers the processes listed below:

- **Communication planning** – Identify the stakeholders, determine the information and communication needs, expectations and resolve the issues.
- **Project structure** – Project organization structure, escalation paths.
- **Status Reporting** - Collecting and distributing status reporting information available to project stakeholders in a timely manner.
- **Risk Management –** Determination of risk, impact and mitigation alternatives that could potentially affect the successful completion of the project deliverables
- **Meeting schedule** – Project meeting schedule with MIS and stakeholders meeting schedules.

Communications Planning

Office of The State Auditor – IT Plan

Communications planning involves proactively determining the information needs of project stakeholders, what information needs to be collected and when, who needs the information, when and in what form. This process also covers methods used to gather and store information, reporting relationships, list of contact information of all stakeholders, schedule for distribution of information, provides a method to update the communications management plan as the project progresses.

Responsibilities of the MIS Project Manager:

- Ownership of the project status reporting.
- Setting up and managing the processes required for the Communication Management aspect of this project.
- Communication owner and as such will be responsible for updating status reports, setting up meeting schedule details, communication plan, actions register and meeting notes.
- Ensure that meeting invites are sent in advance to relevant stakeholders and acceptance of attendees.
- Set-up recurring meeting invites for scheduled meetings with a look ahead up to 3 weeks with Meeting agenda, attendance, minutes and action items.

Office of The State Auditor – IT Plan

General Information

Project	Project Name
Project manager	Project Manager Name
Date range	Week Ending mm/dd/yyyy
Status[1]	

Management Alert

ID	Situation Requiring Management Attention	Action Plan	Owner
	See Risk Analysis Below		

Executive Summary

Weekly Project Status report, including status, risks & issues, dependencies and leadership actions
• Planning Updates • Milestones Achieved • Milestones Missed • Future Milestones • Dependencies • Issues • Risks • Leadership Actions Review • Review progress on existing risks /issues /assumptions • Update tracking • Identify new Risks /Issues and assign resolution ownership

[1] Green: on schedule/on budget; yellow: somewhat behind schedule/somewhat over budget; red: behind schedule/over budget
Note: Green, yellow, red metrics should be agreed upon with sponsors during project initiation. You may want to consider 10% for yellow on small projects but if a project is a multimillion-dollar endeavor, then 10% might be too great a variance before sponsors are notified.

Office of The State Auditor – IT Plan

Accomplishments during Reporting Period

ID	Description of Accomplishment	Planned Completion	Date Completed	Comments
1				
2				
3				
4				

Milestone Report for Next Two Weeks

ID	Description of Activity	Planned Completion	Estimated Completion	Status[2]	Comments
2					
3					
4					
6					
7					

Risk List

Purpose: To validate all the High priority Risks/Issues and take appropriate actions accordingly.

ID	Issue or Risk to Watch	Level Of Severity Yellow/Red	Action Plan
1			
2			

[2] Green: on schedule/on budget; yellow: somewhat behind schedule/somewhat over budget; red: behind schedule/over budget